

Application No.: 09/987,007
Amendment under 37 CFR 1.111
Reply to Office Action dated February 17, 2004
August 17, 2004

AMENDMENTS TO THE CLAIMS

Please substitute the following claims for the pending claims with the same numbers respectively:

Claim 1 (Canceled):

Claim 2 (Currently amended): The A head clamping apparatus of ~~claim 1, wherein:~~ for a magnetic disk tester which tests electromagnetic transducing characteristics of at least one of a magnetic disk and magnetic head, the head clamping apparatus rotating the magnetic disk having a plurality of concentric tracks and positioning the magnetic head onto a target one of the concentric tracks, and the head clamping apparatus comprising:

a microstage supporting the magnetic head and being moved by a microactuator in a direction crossing the concentric tracks;

wherein the microstage has a base attached to the head clamping apparatus, a stage to hold the magnetic head through a head attachment, and two resilient pieces connecting the base to the stage, the base, the stage, and the resilient pieces forming a parallel plate spring mechanism;

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the base has a support protruding toward the stage between the resilient pieces; and

the microactuator is arranged between the support and one of the resilient pieces.

Claim 3 (Currently amended): The A head clamping apparatus ~~of claims 1 or 2,~~ for a magnetic disk tester which tests electromagnetic transducing characteristics of at least one of a magnetic disk and magnetic head, the head clamping apparatus rotating the magnetic disk having a plurality of concentric tracks and positioning the magnetic head onto a target one of the concentric tracks, and the head clamping apparatus comprising:

a microstage supporting the magnetic head and being moved by a microactuator in a direction crossing the concentric tracks;
and

wherein a front end face of the a stage has a cut to divert an external force applied to the stage into a compressing direction of the microactuator.

Claim 4 (Currently amended): A magnetic disk tester comprising:

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a coarse stage having a head load mechanism on which a head clamp is installed, the head clamp holding a piezo-stage which holds a magnetic head assembly, a reflective scale made of a film being disposed on a back face of the piezo-stage, and light-shield stripes being deposited on the film at regular intervals;

a laser head attached to the coarse stage having a light emission/reception part facing the light-shield stripes of the reflective scale; and

positioning means for controlling ~~the~~ a position of the head clamp,

the laser head emitting a laser beam, the reflective scale reflecting ~~the~~ an emitted laser beam, the positioning means detecting the position of the magnetic head assembly on a magnetic disk according to ~~the~~ a reflected laser beam and controlling the position of the head clamp according to an error signal which indicates ~~the~~ a difference between ~~the~~ a detected position and a reference position.

Claim 5 (Currently amended): The magnetic disk tester ~~of~~ according to claim 4, wherein~~+~~ the positioning means has a precise positioning mode and a tracking mode;

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the precise positioning mode controls the magnetic head assembly according to the position of the coarse stage and the position of the magnetic head assembly detected from the reflected laser beam; and

the tracking mode reads a servo burst signal recorded on the magnetic disk prior to a data signal being recorded thereon and controls the position of the magnetic head assembly according to a position error signal generated according to the amplitude of the servo burst signal.

Claim 6 (Currently amended): The magnetic disk tester ~~of~~ according to claims 4 or 5, wherein+ information from the reflective scale is entered into a counting means, an output of the counting means is used to carry out a track-to-track seek operation, and when it is determined that the magnetic head assembly is positioned on a target track, the precise positioning mode is changed to the tracking mode; and

information based on the amplitude of the servo burst signal is used to carry out one of an on-track control and an off-track control of the magnetic head assembly with respect to a center of the target track.

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Claim 7 (Currently amended): A head clamping apparatus for a magnetic disk tester, movably supported by a linear coarse stage and comprising:

a linear micromotion stage attached to a head clamp and configured to hold and move a magnetic head assembly in a direction crossing a moving direction of the linear coarse stage;

a reflective scale attached to a back face of the linear micromotion stage, having light-shield stripes formed at regular intervals;

a laser head attached to the linear coarse stage and having a light emission/reception part facing the light-shield stripes of the reflective scale; and

positioning means configured to control ~~the~~ a position of the head clamp,

the reflective scale reflecting a laser beam emitted from the laser head, the positioning means detecting the position of the magnetic head assembly on a magnetic disk according to ~~the~~ a reflected laser beam and controlling the position of the head clamp according to an error signal which indicates ~~the~~ a difference between ~~the~~ a detected position and a reference position.